# The NIH Scientific Approach to Inclusive Excellence

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NIH Chief Officer for Scientific Workforce Diversity

Association for Women in Science (AWIS)
October 28, 2021





### **Areas To Be Addressed**

- Why diversity matters
- Threats due to COVID-19
- Opportunities

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## The Need for Diverse Perspectives in Science



## Why Diversity Matters More Productive Collaborations

Homophily (researchers publishing with co-authors of the same ethnicity) associated with publication in lower-impact journals, with fewer citations

Mean and Standard Deviations of Statistics for Multi-Authored Publications

Statistics	Two-authored	Three- authored	Four- authored	Ten-authored
Same ethnicity (All Authors)	0.43 (0.49)	0.15 (0.36)	0.08 (0.26)	NS*
Homophily Index	0.70 (0.25)	0.54 (0.22)	0.46 (0.20)	0.27 (0.14)
Impact Factor	2.32 (2.90)	2.59 (3.00)	2.90 (3.23)	4.57 (4.68)

<sup>\*</sup>NS - Not Stated

Freeman & Huang (2015). Collaborating with people like me: ethnic co-authorship within the US. Journal of Labor Economics 33(3): S289-S318.

## Why Diversity Matters Improved Science

A study of 2.5 million scientific papers shows various types of diversity leads to higher impact factor publications & greater number of citations

Independent Variables	Dependent Variables		
independent variables	Impact Factor	Citation Percentile	
Lack of Ethnic Diversity Homophily Factor	-0.153*** (0.042)	-0.833** (0.422)	
Geographic Diversity Number of Addresses on Paper	0.044*** (0.006)	0.346*** (0.061)	
Information Diversity Number of References on Paper	0.015*** (0.001)	0.400*** (0.012)	

**Note:** Sample presented from PubMed for 4-authored papers. Most findings are similarly significant across 2-authored and 3-authored papers for PubMed and Web of Science.

Freeman & Huang (2015). Collaborating with people like me: ethnic co-authorship within the US. Journal of Labor Economics 33(3): S289-S318.

## Why Focus on Scientific Workforce Diversity?

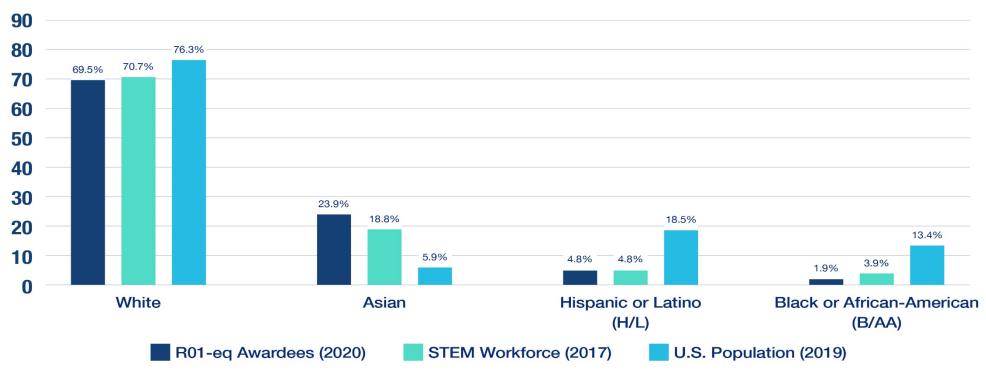
- Bird song was initially a male dominated scientific area
- It was thought that bird song followed particular patterns, based on studies of male birds
- Female scientists found gender-based differences in bird song



Haynes et al. The role of diversity in science: a case study of women advancing female birdsong research. Animal Behaviour Volume 168, October 2020, Pages 19-24.

### Lack of Utilization of the Full Talent Pool

Racial/ethnic representation among National Institutes of Health R01-eq grantees, STEM doctoral workforce, and U.S. population (2017, 2019, and 2020)



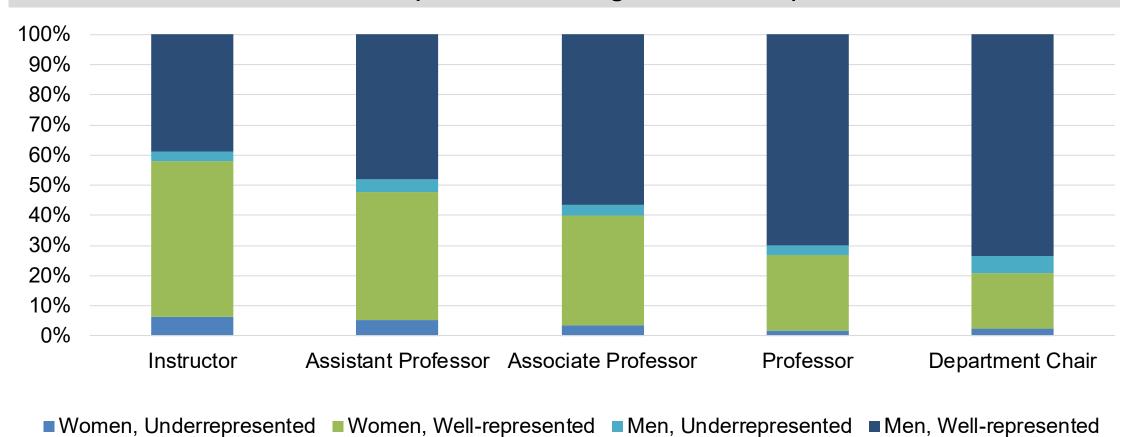
#### Sources:

National Institutes of Health, Chief Officer for Scientific Workforce Diversity, 2021 Progress Infographic. Accessed August 2021 from: https://diversity.nih.gov/sites/coswd/files/images/NIH\_SWD\_2021\_Progress\_Infographic\_Release\_508.pdf National Science Foundation, National Center for Science and Engineering Statistics, Survey of Doctorate Recipients, 2017.

US Census, Quick Facts, 2019 Population Estimates. Accessed August 2021 from: https://www.census.gov/quickfacts/fact/table/US/PST045219

# Diminished Use of the Full Talent Pool Across the Career Spectrum

Proportion of women and underrepresented men diminishes in more advanced positions along the career path.



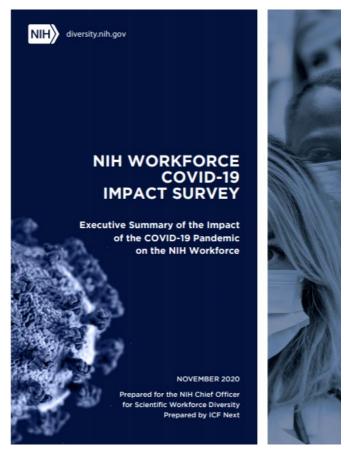
Source: https://www.aamc.org/data-reports/faculty-institutions/interactive-data/2020-us-medical-school-faculty

## **Areas To Be Addressed**

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## **NIH COVID-19 Impact Surveys**

- NIH assessed COVID-19's impact on the biomedical workforce overall, as well as its own internal staff base.
  - NIH Workforce COVID-19 Impact Survey (July 2020)
    - NIH internal workforce
  - Extramural Institutions Survey (October 2020)
    - Vice presidents for research and equivalent roles
  - Extramural Researchers Survey (October 2020)
    - Individuals supported by NIH research funding
- Questionnaires were developed by the **Coronavirus Survey Development Group**, led by the COSWD Office, in collaboration with OER and several other NIH offices.



NIH Workforce COVID-19 Impact Survey
Executive Summary

## NIH COVID-19 Extramural Research Survey Objectives

#### Institutions

- What has been the impact of the pandemic on research activities at extramural institutions?
- What are the current and expected financial impacts to the institutions, including the research workforce?
- How are institutions currently planning for and prioritizing operations?

#### **Individual Researchers**

- What has been the impact of the pandemic on research productivity for individual researchers?
- How do researchers expect their career trajectory to be impacted by the pandemic?
- What external stressors are researchers experiencing?
- Are institutions providing effective support to researchers?

## Overview of NIH COVID-19 Extramural Research Surveys

#### **Institutions Survey Researchers Survey** Research leader (VP for Research or equivalent): Domestic institutions: • Top-funded1,000 domestic Sample Sample | eRA past two years Selection | institutions FY2019 Selection Are in a scientific role Members of the AAMC Minority-serving institutions Participants | 224 out of 705 invites **45,348** out of 234,254 invites Participants | Response 19% Response Rate 32% Rate

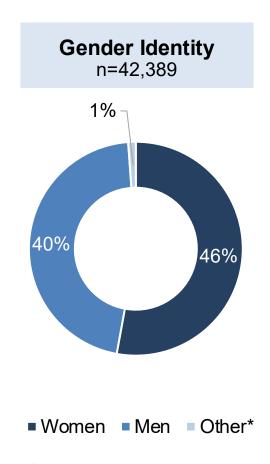
**Timeline** Oct 7 – Nov 6, 2020

Timeline |

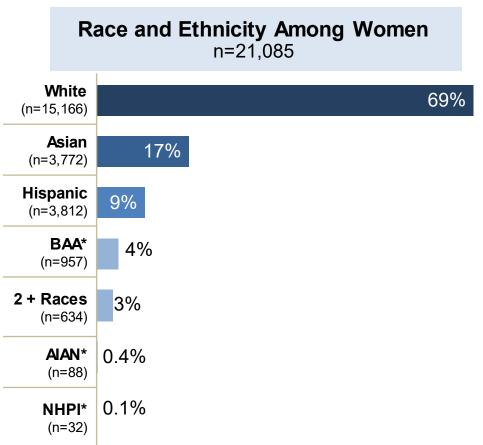
Oct 14 – Nov 13, 2020

<sup>\*</sup>Note: Missing data are excluded from the percentages shown throughout the analysis. Only percentages with more than 5 respondents are shown to protect privacy.

### **General Demographics**



\* The "other" category includes transgender man, transgender woman, genderqueer or gender non-conforming, questioning, and something else.



\*BAA = Black or African American AIAN = Alaska Native/American Indian, NHPI = Native Hawaiian/Pacific Islander; All percentages are out of valid totals, with missing values removed.

#### **Disability Status**

n=21,733

- Of women respondents identified as **having a disability**
- Of women respondents **preferred**not to disclose their disability
  status

#### **Sexual Orientation**

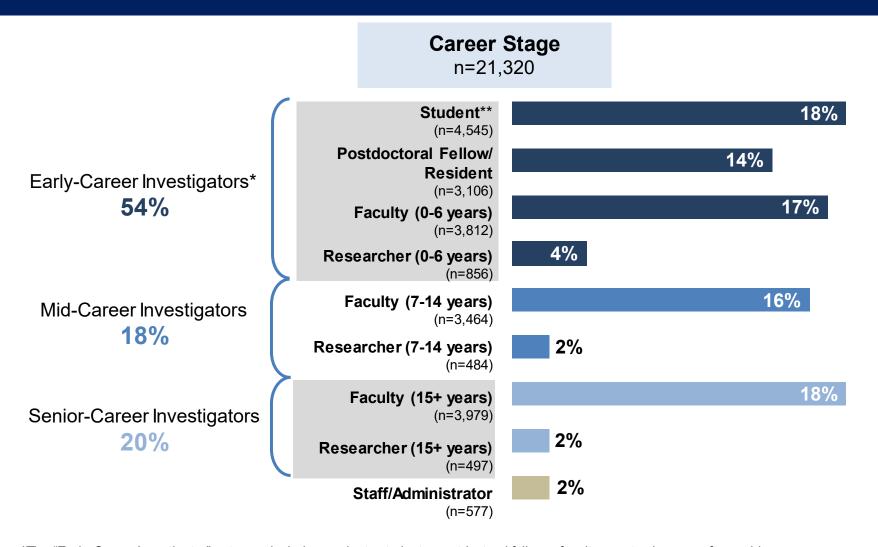
n=21,743

- Of women respondents identified as **lesbian or gay**
- Of women respondents identified as **bisexual**
- Of women respondents identified as "other" \*

**Note:** Missing data and N/A responses are excluded from the percentages shown throughout the analysis. Only percentages with more than 5 respondents are shown to protect privacy.

<sup>\*</sup> The "other" category includes as exual, questioning, and something else.

## **Professional Demographics**



54% Laboratory-based research

19% Clinical research

11% Epidemiological/ public health research

7% Sociological/ community-based research

5% Computational research

**Primary Type of Research** n=21,813

<sup>\*</sup>The "Early-Career Investigator" category includes graduate students, postdoctoral fellows, faculty zero to six years after residency or postdoctoral fellowship, and researchers zero to six years after residency, postdoctoral fellowship, or last advanced degree.

\*\* The "Student" category includes undergraduate students, graduate students, and medical students.

## **High-Level Findings – Extramural Researchers Survey**

#### Professional and personal impact of the pandemic by gender identity

#### **Proportion Reporting...**

Sections:	Section#2	Section#3	Section#4	Section#4	Section #5	Section#6
Response to Key Questions:	Pandemic will have Negative Impact on Career Trajectory	LowerJob Productivity	Societal / Political Events Negatively Impacted Mental Health	Personal Mental/ Physical Health Negatively Impacted Productivity	Caretaking has made it Substantially More Difficult to be Productive	Organization was Supportive in Helping to Remain Productive*
All Respondents	55%	78%	69%	42%	46%	44%
Gender Identity Men (46%)	55%	79%	63%	35%	42%	46%
Women (53%)	55%	77%	76%	48%	50%	42%
Other (0.7%)	59%	79%	85%	81%	42%	33%

<sup>\*</sup>Note: For certain dependent variables, higher percentages correspond to a more negative impact; whereas for other dependent variables, higher percentages correspond to a less negative impact.

**AA** = African American, **AIAN** = Alaska Native / American Indian, **NHPI** = Native Hawaiian / Pacific Islander All percentages are out of valid totals, with missing values removed.

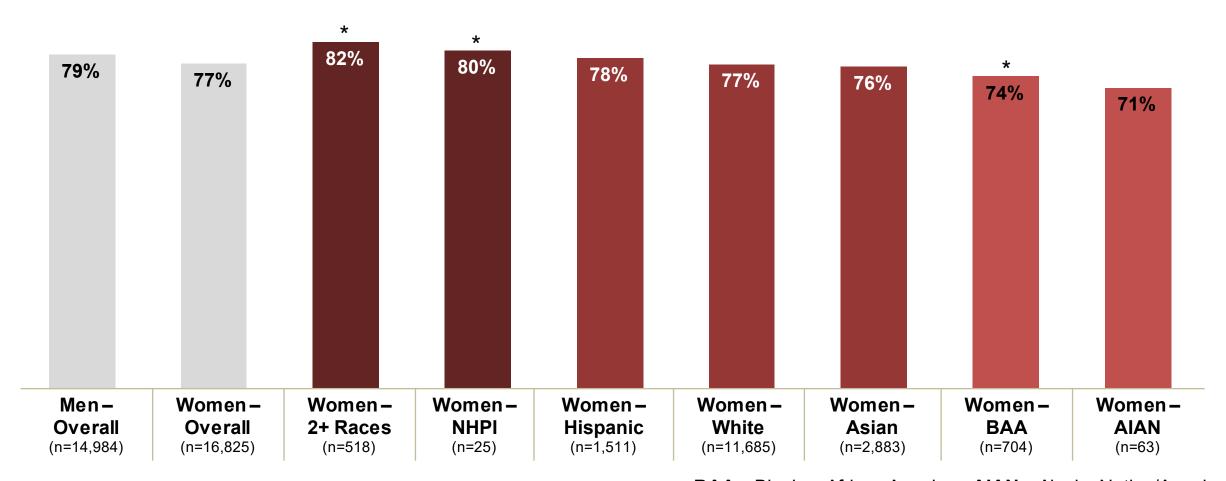
More Negatively Impacted than Overall Average

Less Negatively Impacted than Overall Average

On par with Overall Average

## Impact on Research Productivity – Race and Ethnicity

Percentage citing lower than normal productivity, by race & ethnicity (n = 21,051 women)



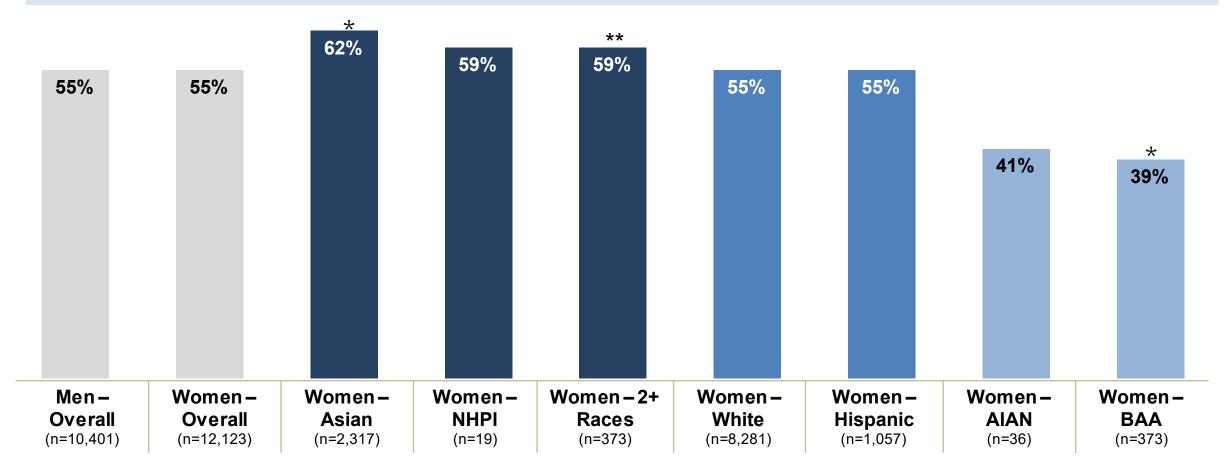
diversity.nih.gov

**BAA =** Black or African American **AIAN** = Alaska Native/American Indian, NHPI = Native Hawaiian/Pacific Islander

<sup>\*</sup> Statistically significant difference at a p≤0.05 level vs. women overall

## Impact on Career Trajectory – Race and Ethnicity

Percentage reporting that the pandemic will negatively affect their career trajectory by gender identity overall and by women's racial and ethnic group (n = 21,067 women)



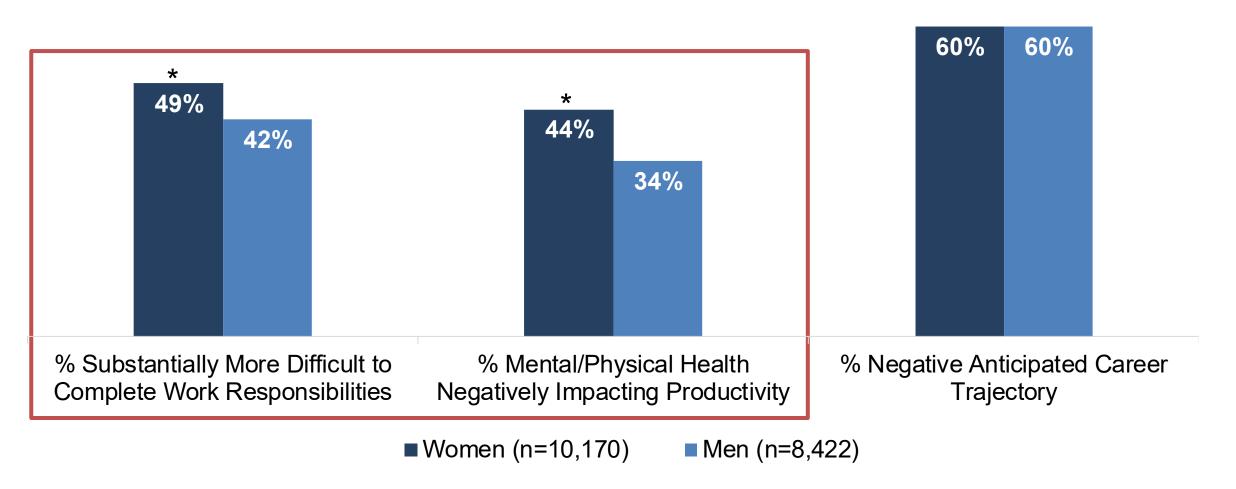
<sup>\*</sup>Statistically significant at a p≤0.05 level vs. women overall

**BAA =** Black or African American **AIAN** = Alaska Native/American Indian, **NHPI** = Native Hawaiian/Pacific Islander

<sup>\*\*</sup>Statistically significant at a p≤0.1 level vs. women overall

## Impact of Caretaking – Women and Men

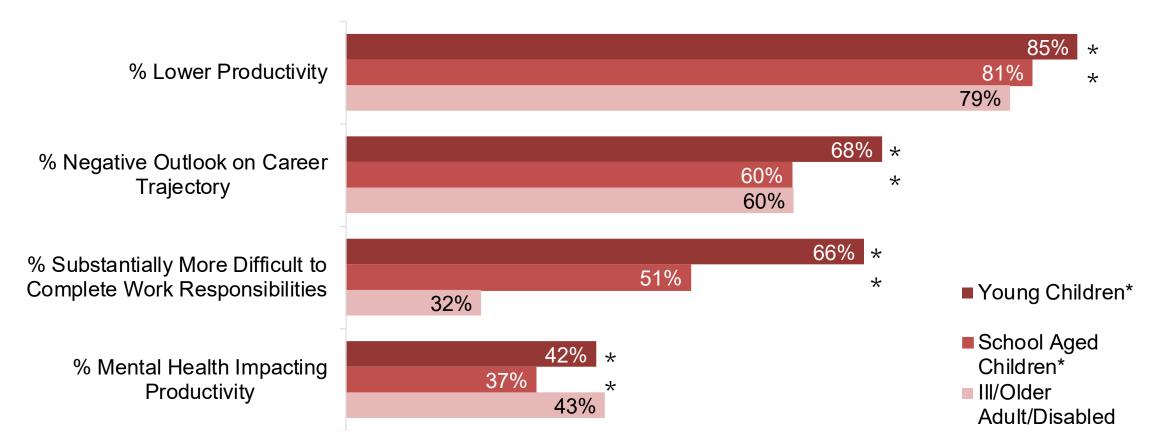
#### Impact of Caretaking on Key Outcomes by Gender (n = 18,592)



<sup>\*</sup>Statistically significant difference at a p≤0.001 level

## Impact of Caretaking – Type of Dependent

#### Differences in Key Outcomes Among Caretakers by Type of Dependent (n = 10,141)



<sup>\*</sup>Young children refers to children ages five or younger. School aged children refers to children ages six through 18.

**BAA =** Black or African American **AIAN** = Alaska Native/American Indian, **NHPI** = Native Hawaiian/Pacific Islander

<sup>\*\*</sup>Statistically significant at a p≤0.001 level.

## **NIH Actions**

- Childcare Costs for Ruth L. Kirschstein National Research Service Award (NRSA) Individual Fellows - NOT-OD-21-074 - 3/15/21
- F and K award extensions NOT-OD-21-052 2/2/21
- ESI extensions Extramural Nexus notice 4/9/20
- R13 and U13 Identify and publicizing resources for childcare and other types of family care
- Continue to evaluate data and consider policy

<sup>\*</sup>The "Early Career Investigator" category as used in this analysis includes graduate students, postdoctoral fellows, faculty zero to six years after residency or postdoctoral fellowship, and researchers zero to six years after residency/postdoctoral fellowship/last advanced degree.

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## **NIH UNITE Initiative**

### The NIH UNITE Initiative



- Events of 2020 brought into sharp relief the ongoing reality of racial injustice in our country, and the responsibility of all of us to address this issue
- A series of intense Institute and Center Director meeting discussions were held to identify initial issues
- Two self-assembled affinity groups at NIH (8CRE, AA/B Scientists) and the Anti-Harassment SC met with NIH leadership for candid discussions that informed next steps
- We have arrived at a shared commitment to address structural racism: we must not allow this pivotal moment to pass



## The NIH UNITE Initiative



- Understanding stakeholder experiences through listening and learning
- New research on health disparities/minority health/health equity
- Improving the NIH Culture and Structure for Equity, Inclusion, and Excellence
- Transparency, communication, and accountability with our internal and external stakeholders
- <u>Extramural Research Ecosystem: Changing Policy, Culture, and Structure to Promote Workforce Diversity</u>



### **Initial UNITE Recommendations**



 Publicly commit to identifying and correcting any NIH policies or practices that may have helped to perpetuate structural racism

## Acknowledgement



"To those individuals in the biomedical research enterprise who have endured disadvantages due to structural racism, I am truly sorry.

NIH is committed to instituting new ways to support diversity, equity, and inclusion, and identifying and dismantling any policies and practices at our own agency that may harm our workforce and our science."

https://www.nih.gov/ending-structural-racism



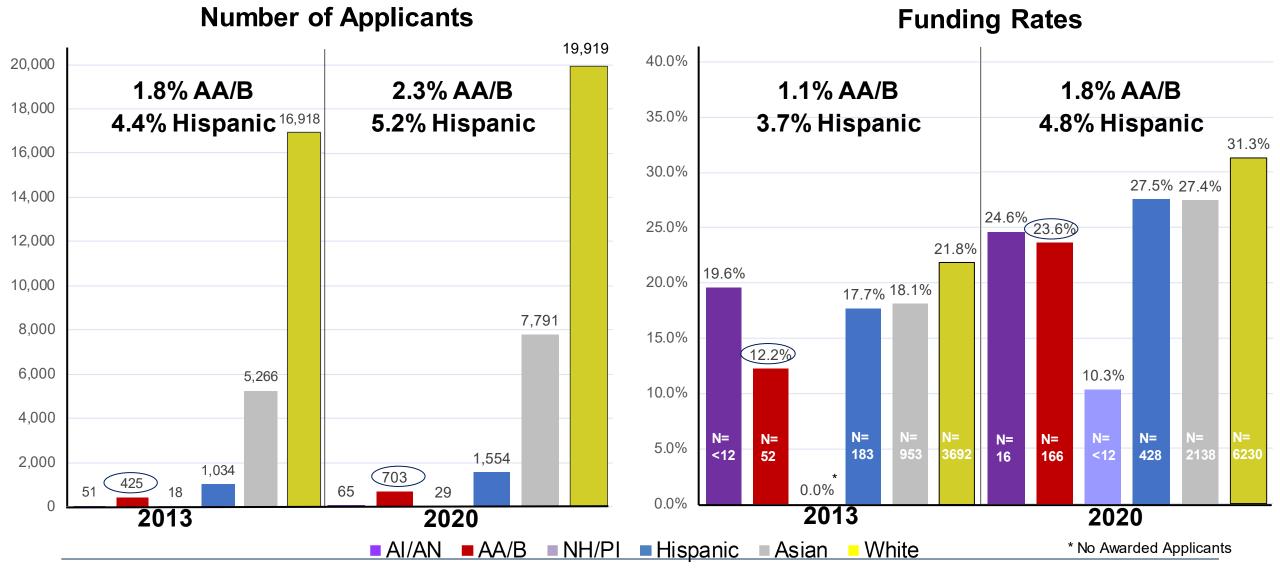
Francis S. Collins, M.D., Ph.D., NIH Director

#### **Initial UNITE Recommendations and Actions**



- Publicly commit to identifying and correcting any NIH policies or practices that may have helped to perpetuate structural racism – Published 3/1/21
- Continue to aggressively implement approaches to address the "Ginther Gap" and enhance portfolio diversity

## R01eq Applicants and Funding Rates Type 1 and Type 2: FY2013 and FY2020 (by Race/Ethnicity)





#### **Initial UNITE Recommendations and Actions**



- Publicly commit to identifying and correcting any NIH policies or practices that may have helped to perpetuate structural racism – Published 3/1/21
- Continue to aggressively implement approaches to address the "Ginther Gap" and enhance portfolio diversity *Ongoing*
- Launch a multi-phased, -tiered, and -integrated Common Fund Initiative focused on transformative health disparities research initiatives to reduce health disparities/ inequities

## **Action**



## NIH Common Fund Transformative Research to Address Health Disparities and Advance Health Equity – Committed up to \$58M

Two FOAs released 3/26/21: 11 awards announced 10/13/21

- 1) RFA-RM-21-021 Transformative Research to Address Health Disparities and Advance Health Equity (U01 Clinical Trial Allowed) 6 awards
- RFA-RM-21-022 Transformative Research to Address Health Disparities and Advance Health Equity at Minority Serving Institutions (U01 Clinical Trial Allowed) - 5 awards; additional competition FY 22



#### **Initial UNITE Recommendations and Actions**



- Publicly commit to identifying and correcting any NIH policies or practices that may have helped to perpetuate structural racism – Published 3/1/21
- Continue to aggressively implement approaches to address the "Ginther Gap" and enhance portfolio diversity *Ongoing*
- Launch a multi-phased, -tiered, and -integrated Common Fund Initiative focused on transformative health disparities research initiatives to reduce health disparities/ inequities – Implemented
- Ensure a robust NIH Enterprise-wide commitment to support the NIMHD FOA focused on the effects of structural racism and discrimination on health disparities/ inequities; encourage funding levels that are commensurate with overall IC resources

## **Action**



Funding Opportunity Title	Understanding and Addressing the Impact of Structural Racism and Discrimination on Minority Health and Health Disparities (R01 Clinical Trial Optional)		
Activity Code	R01 Research Project Grant		
Announcement Type	New	With the commitment of up to	
Related Notices	None	\$30.8 M by 25 ICOs:	
Funding Opportunity Announcement (FOA) Number	DEA MD 04 004	<ul> <li>Letters of intent due 7/20/21</li> </ul>	
runding Opportunity Announcement (FOA) Number	RFA-MD-21-004	- Applications due 8/24/21	
Companion Funding Opportunity	None	Applications due of 2-1/21	
Number of Applications	See Section III. 3. Additional Information on Eligibility.		

https://grants.nih.gov/grants/guide/rfa-files/RFA-MD-21-004.html



### Action – BRAIN FOA

## First NIH FOA using Plan to Enhance Diverse Perspectives as a consideration for scoring

#### Department of Health and Human Services

#### Part 1. Overview Information

Participating Organization(s)

National Institutes of Health (NIH)

Components of Participating Organizations National Institute of Mental Health (NIMH)

National Eye Institute (NEI)

National Institute on Aging (NIA)

National Institute on Alcohol Abuse and Alcoholism (NIAAA)

National Institute of Biomedical Imaging and Bioengineering (NIBIB)

Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD)

National Institute on Deafness and Other Communication Disorders (NIDCD)

National Institute on Drug Abuse (NIDA)

National Institute of Neurological Disorders and Stroke (NINDS)

National Center for Complementary and Integrative Health (NCCIH)

**Funding Opportunity Title** 

https://grants.nih.gov/grants/guide/rf a-files/RFA-MH-21-180.html

BRAIN Initiative: Reagent Resources for Brain Cell Type-Specific Access and Manipulation to Broaden Distribution of Enabling Technologies for Neuroscience (U24 Clinical Trial Not Allowed)



#### **Initial UNITE Recommendations**



- Publicly commit to identifying and correcting any NIH policies or practices that may have helped to perpetuate structural racism – Published 3/1/21
- Continue to aggressively implement approaches to address the "Ginther Gap" and enhance portfolio diversity - Ongoing
- Launch a multi-phased, -tiered, and -integrated Common Fund Initiative focused on transformative health disparities research initiatives to reduce health disparities/ inequities – RFAs published 3/26/21
- Ensure a robust NIH Enterprise-wide commitment to support the NIMHD FOA focused on the effects of structural racism and discrimination on health disparities/ inequities; encourage funding levels that are commensurate with overall IC resources – RFA published 3/23/21 with 25 ICOs
- Develop a sustainable process to systematically gather and make public the demographics of our internal and external workforce



## **Action** — NIH Data by Race/Ethnicity, Disability Status





#### **REPORTS**

Home > Report Catalog > Report Catalog Results

#### Search Results for Reports and Statistics



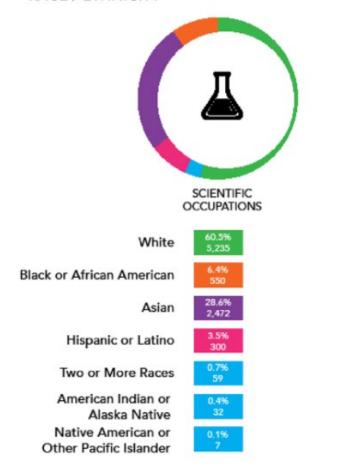


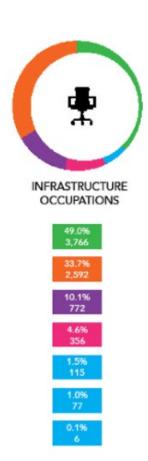
https://report.nih.gov/sites/report/files/docs/NIH Principal Investigators by Gender Race Ethnicity and Disability 2016-2020 02 23 2021 PDF.pdf



### Action - NIH Internal Data FY 21, Q2

RACE / ETHNICITY









https://www.edi.nih.gov/people/res ources/advancing-racial-equity/nihworkforce-profile-fy21q02

Employees classified in the five racial groups or Two or more races are all non-Hispanic or Latino. Employees classified as Hispanic or Latino may identify with any combination of the five racial categories.





## **UNITE Recommendations and Actions Going Forward**

# **UNITE Actions/Priorities Going Forward – Next 6 Months**



- To facilitate HD/MH/HE research, the President's budget has proposed increased funding for NIMHD, NINR, NHLBI, and FIC
- Additional FOAs that focus on IC-specific disease/topic areas related to HD/MH/HE
- Develop programs to spur institutional culture change in support of inclusivity and equity



# Faculty Institutional Recruitment for Sustainable Transformation (FIRST)

### **Overarching Goal**

Create cultures of inclusive excellence

### **Program Objectives:**

- Faculty cohort model for hiring, multi-level mentoring, professional development
- Integrated, institution-wide systems to address bias, faculty equity, mentoring, and work/life issues
- Coordination and Evaluation Center (CEC): Independent program evaluation - faculty and institutional level

## Estimated Funds Available: \$241 M over 9 years

## Institutional Culture Change Initial FIRST Cohorts















# Institutional Culture Change FIRST Coordination and Evaluation Center



## Scientific Workforce Diversity Seminar Series



# Achieving Equity in Faculty Hiring: Pros and Consof Cohort Recruitment

December 8, 2021, 1 - 2 p.m.

- David Acosta, Association of American Medical Colleges (AAMC)
- Sibby Anderson-Thompkins, University of the South
- Michelle M. Camacho, University of San Diego
- Carla Freeman, Emory University

https://diversity.nih.gov/science-diversity/swd-seminar-series

# **UNITE Actions/Priorities Going Forward – Next 6 Months**



- To facilitate HD/MH/HE research, the President's budget has proposed increased funding for NIMHD, NINR, NHLBI, and FIC
- Additional FOAs that focus on IC-specific disease/topic areas related to HD/MH/HE
- Develop programs to spur institutional culture change in support of inclusivity and equity
- Increase URG career opportunities, starting with increasing IC participation in Science Education Partnership Award (SEPA) – targeting K – 12 STEM education

# **UNITE Actions/Priorities Going Forward – Next 6 Months**



- Examine NIH staff (e.g., PO, SRO) interactions with applicants (e.g., URG applicants) to address bias or inequities that may impact funding opportunities
- Develop programs to expand NIH interactions with and support of HBCUs, TCUs and other MSIs



# Injustice anywhere is a threat to justice everywhere

Martin Luther King, Jr







Leading Edge



### **Commentary**

# Affirming NIH's commitment to addressing structural racism in the biomedical research enterprise

Francis S. Collins,<sup>1,\*</sup> Amy Bany Adams,<sup>2</sup> Courtney Aklin,<sup>3</sup> Trevor K. Archer,<sup>4</sup> Marie A. Bernard,<sup>5,6</sup> Ericka Boone,<sup>7</sup> John Burklow,<sup>8</sup> Michele K. Evans,<sup>6</sup> Sadhana Jackson,<sup>2,9</sup> Alfred C. Johnson,<sup>10</sup> Jon Lorsch,<sup>11</sup> Mia Rochelle Lowden,<sup>12</sup> Anna María Nápoles,<sup>13</sup> Anna E. Ordóñez,<sup>14</sup> Robert Rivers,<sup>15</sup> Victoria Rucker,<sup>5,16</sup> Tara Schwetz,<sup>3</sup> Julia A. Segre,<sup>17</sup> Lawrence A. Tabak,<sup>3</sup> Monica Webb Hooper,<sup>13</sup> Carrie Wolinetz,<sup>3</sup> and NIH UNITE

DOI: 10.1016/j.cell.2021.05.014 (2021).



### The NIH UNITE Initiative

### **UNITE Co-Chairs**

- Marie A. Bernard, NIH Office of the Director/Office of the Chief Officer for Scientific Workforce Diversity
- Alfred Johnson, NIH Office of the Director/ Office of Management
- Lawrence Tabak, NIH Office of the Director

### **UNITE Program Manager**

 Victoria Rucker, Center for Information Technology/ NIH Office of the Director

### **UNITE Program Support**

- Brittany Chao, NIH Office of the Director
- Marzjah Esther, NIH Office of the Director



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Courtney Aklin (IMOD/OD)

Mia Rochelle Lowden (ORIP/OD)

Monica Webb Hooper (NIMHD)

Shelli Avenevoli (NIMH)

Dexter Collins (FIC)

Laura Cooper (NIAMS)

Kevin Davis (CIT)

Leslie Littlejohn (NIAMS)

Troy Muhammad (NCI)

Ian Myles (NIAID)

Roland Owens (OIR/OD)

Kelly Ten Hagen (NIDCR)

Brian Trent (NEI)

Della White (NCCIH)

- +Cara Finley (IMOD/OD)
- +Melissa Laitner (OD)
- +Vanessa Marshall (NIMHD)
- +Kamilah Rashid (IMOD/OD)

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Gwen Bishop (NIDCD)

Vence Bonham (NHGRI)

Juanita Chinn (NICHD)

Janine Clayton (ORWH/OD)

Kathy Etz (NIDA)

Justin Hentges (AoU/OD)

Daryl Holder (CC)

Samantha Jonson (NCATS)

Joan Romaine (NIAAA)

Asha Storm (NIBIB)

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Talin Barnes (NIEHS)

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Charles Egwuagu (NEI)

Courtney Fitzhugh (NHLBI)

Kenneth Gibbs (NIGMS)

Kendall Hill (CSR)

Camille Hoover (NIDDK)

Laura Koehly (NHGRI)

Shawn Lewis (NINR)

Marguerite Matthews

(NINDS)

Shaun Sims (NIBIB)

Brenda Robles (CC)

+Melissa Espinoza (NIA)

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### Amy Bany Adams (NINDS) John Burklow (IMOD/OD) Sadhana Jackson (NINDS, NCI)

Mohammed Aiyegbo (NIAID)

Albert Avila (NIDA)
Samantha Calabrese (NICHD)

Angie Cruz-Albertorio (NCATS)

Carla Garnett (OCPL/OD)

Lakshmi Grama (NCI)

Carl Hashimoto (OIR/OD)

Nakia Makonnen (NIDCD)

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Eric Sid (NCATS)

Wayne Wang (NHLBI)

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Rena D'Souza (NIDCR)

Zeynep Erim (NIBIB)

Leonardo Garzon-Velez (FIC)

Bettie Graham (NHGRI)

Leah Hubbard (NCI)

Patricia Jones (NIA)

Vonda Smith (CSR)

James Washington (NINDS)

Maryam Zaringhalam (NLM)

+Mark Stevens (OM/OD)

Committee Co-Chairs +Staff Leads





## Great minds think differently.

- Check out our website: <u>diversity.nih.gov</u>
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- Follow us on Twitter @NIH COSWD
- Email us at <u>SWD\_Talks@nih.gov</u>